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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,847	04/27/2001	Pedro S. de Souza	020431.0862	2784

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EXAMINER	
TO, BAOQUOC N	

ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/844,847	DE SOUZA ET AL.	
	Examiner	Art Unit	
	Baoquoc N To	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08/30/04*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-10,12-19,21-28 and 30-32* is/are pending in the application.

4a) Of the above claim(s) *1,11,20 and 29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-10,12-19,21-28 and 30-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Office withdraws indication for allowance on claims 30-32 in the Office Action dated on 06/30/2004. The Office regrets any inconveniences due to the applicants.

2. Claims 1, 11, 20 and 29 are canceled and claims 2-7, 12-16, 21-25 and 30-32 amended in the amendment filed on 08/30/2004.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2-10, 12-19, 21-28 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malloy (US. Patent No. 5,926,818) in view of Bakalash et al. (US. Patent No. 6,3434,544 B1).

Regarding on claims 7, 16 and 25, Malloy teaches a system for optimization using multi-dimensional data, comprising:

A server operable to:

Use a multi-dimensional data model, organize data stored at one or more data storage location, the multi-dimensional data model including a plurality of data dimensions each including a hierarchy members (col. 8, lines 11-20);

Receive input from a user specifying a problem instance to be solved using an optimization engine, the problem instance specified by the user in a multi-

dimensional format, the optimization engine being unable to solve the problem instance in the multi-dimensional format "to access the multi-dimensional data in the relational database 118, a user interact with the OLAP client 100. This interaction result in a request (i.e. command) for a database operation being formed, which transmitted to the OLAP agent 110 and/or OLAP engine 112 executed by the OLAP server 102 via the network interface program 104 and 108. The OLAP agent 110 and/or OLAP engine 112 execute function via the storage manager 114 to access multi-dimensional data from a data storage manager. In Arbor Software's Essbase OLAP software, data is requested by specifying one or more sparse index keys (i.e., a sparse index key is an encoding of one member from each sparse dimension) that identifying one or more dense data blocks in the multi-dimensional database 300" (col. 6, lines 19-32), the problem instance comprising:

a problem domain that includes all data in the multi-dimensional data model that is located hierarchically below one or more specified intersections in the multi-dimensional data model, each intersection identified by specifying a member in each data dimension (the intersection of Q2 308, Product 324, and Cost 326 contains the value, 369, representing the costs of all products in the second quarter of 1997) (col. 6, lines 49-52);

an evaluation level specified by identifying a particular level in the hierarchy of each data dimension (if one member of the dimension is selected, then the remaining dimensions in which a range of members (or all members) are selected

defines a sub-cub in which the number of dimensions is reduced by one) (col. 6, lines 27-31);

an objective function including a data measure or a combination of data measures to be optimized (col. 6, lines 19-32); and

one or more problem constraint (col. 6, lines 19-32); and

communicate the problem instance in the multi-dimensional format (col. 6, lines 19-32); and

receive the problem instance in the multi-dimensional format (col. 6, lines 19-32);

transform the problem instance into a format appropriate for the optimization engine (col. 6, lines 19-32); and

communicate the transform problem instance to the optimization engine to be solved (col. 6, lines 19-32).

Malloy teaches the multi-dimensional data structure to store the data to be optimized by the OLAP engine. Malloy also suggests "to access the multi-dimensional data in the relational database 118, a user interact with the OLAP client 100. This interaction result in a request (i.e. command) for a database operation being formed, which transmitted to the OLAP agent 110 and/or OLAP engine 112 executed by the OLAP server 102 via the network interface program 104 and 108. The OLAP agent 110 and/or OLAP engine 112 execute function via the storage manager 114 to access multi-dimensional data from a data storage manager. In Arbor Software's Essbase OLAP software, data is requested by specifying one or more sparse index keys (i.e., a sparse index key is an encoding of one member from each sparse dimension) that identifying

one or more dense data blocks in the multi-dimensional database 300" (col. 6, lines 19-32). This suggests accessing the multi-dimensional data structure from the OLAP engines. Malloy's system employed a OLAP agent 110 which act as an agent between the client 106 and the sever 102. The purpose of the agent to interpret the database operation command to the language, which accessed the multi-dimensional data from the data storage manager. However, Bakalash discloses the "Aggregation Server 603 of the present invention serves the OLAP Server 605 via standard interface such as OLDB, OLE-DB, ODBC, SQL, API, JDBC, etc. Aggregation results required by the OLAP Server 605 are applied on demand. Typically, the OLAP Server 605 disintegrates the query, via parsing process, into series of requests. Each such request, specifying a n-dimensional coordinate, is presented to the Aggregation Server 603 for the coordinate's value. The Configuration Manager 631 sets the Aggregation Client Interface 629 and input Analyzer 627 for proper communication protocol according to the client user (e.g. OLAP Server 605). The Input Analyzer 627 converts the input format to make it suitable for the MDDB Handler 623" (col. 14, lines 33-45). This suggests the input query is parsed and converted into the format that fit the MDDB for retrieving information. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Malloy's system to include parsing and converting the query into the format that fit the MDDB for retrieving information as taught by Bakalash in order to convert the in-appropriate format into the format that be able to optimize data.

Regarding on claim 3, Malloy teaches a business repository operable to store the multi-dimensional data model, the server further operable to communicate with the business repository to access data specified using the multi-dimensional format (col. 10, lines 18-33).

Regarding on claim 4, Malloy teaches subject mater excepting transforming the problem instance comprises: parsing the data transforming engine will identify and open each file of the pre-process acquired data the received problem instance to identify pre-defined multidimensional syntax; and translating the multi-dimensional syntax various data sources and varying data formats to a syntax appropriate for the optimization engine. However, Bakalash discloses the "Aggregation Server 603 of the present invention serves the OLAP Server 605 via standard interface such as OLDB, OLE-DB, ODBC, SQL, API, JDBC, etc. Aggregation results required by the OLAP Server 605 are applied on demand. Typically, the OLAP Server 605 disintegrates the query, via parsing process, into series of requests. Each such request, specifying a n-dimensional coordinate, is presented to the Aggregation Server 603 for the coordinate's value. The Configuration Manager 631 sets the Aggregation Client Interface 629 and input Analyzer 627 for proper communication protocol according to the client user (e.g. OLAP Server 605). The Input Analyzer 627 converts the input format to make it suitable for the MDDB Handler 623" (col. 14, lines 33-45). This suggests the input query is parsed and converted into the format that fit the MDDB for retrieving information. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Malloy's system to include parsing and converting the query into the

format that fit the MDDB for retrieving information as taught by Bakalash in order to convert the in-appropriate format into the format that be able to optimize data.

Regarding on claim 5, Malloy teaches subject matter excepting for transforming the problem instance comprises generating multiple problem constraints in a format appropriate for the optimization engine from a single problem constraint included in the received problem instance, the single problem constraint identifying a member in each data dimension to which the constraint is applicable. However, Bakalash discloses the "Aggregation Server 603 of the present invention serves the OLAP Server 605 via standard interface such as OLDB, OLE-DB, ODBC, SQL, API, JDBC, etc. Aggregation results required by the OLAP Server 605 are applied on demand. Typically, the OLAP Server 605 disintegrates the query, via parsing process, into series of requests. Each such request, specifying a n-dimensional coordinate, is presented to the Aggregation Server 603 for the coordinate's value. The Configuration Manager 631 sets the Aggregation Client Interface 629 and input Analyzer 627 for proper communication protocol according to the client user (e.g. OLAP Server 605). The Input Analyzer 627 converts the input format to make it suitable for the MDDB Handler 623" (col. 14, lines 33-45). This suggests the input query is parsed and converted into the format that fit the MDDB for retrieving information. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Malloy's system to include parsing and converting the query into the format that fit the MDDB for retrieving information as taught by Bakalash in order to convert the in-appropriate format into the format that be able to optimize data.

Regarding on claim 6, Malloy teaches the subject matter excepting for transforming the problem instance comprises importing data applicable to the problem instance from one or more data storage locations, the imported data being included in the transformed problem instance in a format appropriate for the optimization engine. However, Bakalash discloses the "Aggregation Server 603 of the present invention serves the OLAP Server 605 via standard interface such as OLDB, OLE-DB, ODBC, SQL, API, JDBC, etc. Aggregation results required by the OLAP Server 605 are applied on demand. Typically, the OLAP Server 605 disintegrates the query, via parsing process, into series of requests. Each such request, specifying a n-dimensional coordinate, is presented to the Aggregation Server 603 for the coordinate's value. The Configuration Manager 631 sets the Aggregation Client Interface 629 and input Analyzer 627 for proper communication protocol according to the client user (e.g. OLAP Server 605). The Input Analyzer 627 converts the input format to make it suitable for the MDDB Handler 623" (col. 14, lines 33-45). This suggests the input query is parsed and converted into the format that fit the MDDB for retrieving information. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Malloy's system to include parsing and converting the query into the format that fit the MDDB for retrieving information as taught by Bakalash in order to convert the in-appropriate format into the format that be able to optimize data.

Regarding on claims 8, 17 and 26, Malloy teaches one or more data measures included in the objective function have an associated data value in a data storage

location for each of one or more intersections in the problem domain (col. 8, lines 48-58).

Regarding on claims 9, 18 and 27, Malloy teaches the objective function further comprises an aggregation domain for each data measure (col. 8, lines 52-55).

Regarding on claims 10, 19 and 28, Malloy teaches the server is further operable to replicate a single constraint in the multi-dimensional format into multiple constraints in the multi-dimensional format, the single constraint including one or more coverage sets identifying multiple members of one or more data dimensions to which the constraint applies (parameters) (col. 6, lines 31-37).

Regarding on claim 12 and 21, Malloy teaches receiving a solution associated with the problem instance from the optimization engine; and using the transformation module, transforming the solution into the multi-dimensional format (col. 10, lines 18-33).

Regarding on claims 13 and 22, Malloy teaches the subject matter excepting for the transforming the problem instance comprises: parsing the received problem instance to identify pre-defined multi-dimensional syntax; and translating the multi-dimensional syntax to a syntax appropriate for the optimization engine. However, Bakalash discloses the "Aggregation Server 603 of the present invention serves the OLAP Server 605 via standard interface such as OLDB, OLE-DB, ODBC, SQL, API, JDBC, etc. Aggregation results required by the OLAP Server 605 are applied on demand. Typically, the OLAP Server 605 disintegrates the query, via parsing process, into series of requests. Each such request, specifying a n-dimensional coordinate, is

presented to the Aggregation Server 603 for the coordinate's value. The Configuration Manager 631 sets the Aggregation Client Interface 629 and input Analyzer 627 for proper communication protocol according to the client user (e.g. OLAP Server 605). The Input Analyzer 627 converts the input format to make it suitable for the MDDB Handler 623" (col. 14, lines 33-45). This suggests the input query is parsed and converted into the format that fit the MDDB for retrieving information. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Malloy's system to include parsing and converting the query into the format that fit the MDDB for retrieving information as taught by Bakalash in order to convert the in-appropriate format into the format that be able to optimize data.

Regarding on claims 14 and 23, Malloy teaches the subject matter excepting for the transforming the problem instance comprises generating multiple problem constraints in a format appropriate for the optimization engine form a single problem constraint included in the specified problem instance, the single problem constraint identifying a member in each data dimension to which the constraint is applicable. However, Bakalash discloses the "Aggregation Server 603 of the present invention serves the OLAP Server 605 via standard interface such as OLDB, OLE-DB, ODBC, SQL, API, JDBC, etc. Aggregation results required by the OLAP Server 605 are applied on demand. Typically, the OLAP Server 605 disintegrates the query, via parsing process, into series of requests. Each such request, specifying a n-dimensional coordinate, is presented to the Aggregation Server 603 for the coordinate's value. The Configuration Manager 631 sets the Aggregation Client Interface 629 and input

Analyzer 627 for proper communication protocol according to the client user (e.g. OLAP Server 605). The Input Analyzer 627 converts the input format to make it suitable for the MDDB Handler 623" (col. 14, lines 33-45). This teaches the query is the problem is the problem instance. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Malloy's system to include parsing and converting the query into the format that fit the MDDB for retrieving information as taught by Bakalash in order to convert the in-appropriate format into the format that be able to optimize data.

Regarding on claims 15 and 24, Malloy teaches transforming the problem instance comprises importing data applicable to the problem instance from one or more data storage locations, the imported data being included in the transformed problem instance in a format appropriate for the optimization engine. However, Bakalash discloses the "Aggregation Server 603 of the present invention serves the OLAP Server 605 via standard interface such as OLDB, OLE-DB, ODBC, SQL, API, JDBC, etc. Aggregation results required by the OLAP Server 605 are applied on demand. Typically, the OLAP Server 605 disintegrates the query, via parsing process, into series of requests. Each such request, specifying a n-dimensional coordinate, is presented to the Aggregation Server 603 for the coordinate's value. The Configuration Manager 631 sets the Aggregation Client Interface 629 and input Analyzer 627 for proper communication protocol according to the client user (e.g. OLAP Server 605). The Input Analyzer 627 converts the input format to make it suitable for the MDDB Handler 623" (col. 14, lines 33-45). This suggests the input query is parsed and converted into the

format that fit the MDDB for retrieving information. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Malloy's system to include parsing and converting the query into the format that fit the MDDB for retrieving information as taught by Bakalash in order to convert the in-appropriate format into the format that be able to optimize data.

Claims 30-32 are rejected under the same reason as claims 1, 16 and 25.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is at 571-272-4041 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached at 571-272-4107.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231.

The fax numbers for the organization where this application or proceeding is assigned are as follow:

(703) 872-9306 [Official Communication]

Hand-delivered responses should be brought to:

Crystal Park II
2121 Crystal Drive

Arlington, VA 22202
Fourth Floor (Receptionist).

Baoquoc N. To
Nov 10, 2004

JEAN M. CORRELUS
PRIMARY EXAMINER